Prevalence of Sexual Assault in Virginia

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Executive Summary

Sexual assault is a serious social problem that affects the lives of many men, women and children. Most sexual assaults are not reported to authorities and most victims do not seek services. As a result, accurate statistics on the prevalence and incidence of sexual victimization are very difficult to obtain. To provide a more reliable estimate, several nationwide, representative telephone surveys have been conducted. However, these nationwide prevalence data do not provide adequate information for program planers at the state level.

The Virginia Department of Health (VDH) sought to determine the prevalence of sexual assault in Virginia. A survey was conducted to provide information on the magnitude of sexual assault victimization in the state, the characteristics of assault experiences, reporting rates, service needs of victims, and access and barriers to services.

A random digit dialing (RDD) telephone survey was conducted in Virginia between November 2002 and February 2003. A total of 1,769 women and 705 men ages 18 and older were interviewed. Survey respondents were asked about their history of sexual assault, the type of assault, the perpetrator, consequences of the assault, help-seeking behaviors, lifetime experiences of other traumatic events, perception of personal safety, availability of services and perceptions of community responses to sexual assault. Of the respondents, 489 women and 91 men were identified as victims of sexual assault.

Analysis of the data showed that sexual assault is a prevalent problem in Virginia. The following are key findings of the study:

- The lifetime prevalence of sexual assault in Virginia was 27.6 percent among females and 12.9 percent among males. One in four women and one in eight men have been victims of sexual assault.

- The majority of female victims (17.8 percent) were victims of rape. The majority of male victims were either molested (6.4 percent) or raped (4.5 percent) as children.

- One percent of surveyed women and 0.1 percent of surveyed men were sexually assaulted in the previous year. The average number of sexual assaults per woman in the previous year was 1.7.

- The age of victims at the time of the sexual assault ranged from 0 to 50 years in females and 3 to 38 years in males. However, the majority of sexual assault incidents occurred when victims were under 18 years of age: 78.1 percent among female victims and 94.4 percent among male victims. The mean age of first sexual assault was 14 years for females and 12 years for males.

- Multiple assaults by the same person were reported by 20.4 percent of female victims and 25.3 percent of male victims. Over a quarter of female victims (29

percent) reported being assaulted multiple times by two or more people, compared to 12.1 percent of male victims.

- The majority of assaults against females (96.4 percent) and males (60.0 percent) were perpetrated by males. However, of the perpetrators that assaulted males, 38.6 percent were females. Most perpetrators victimizing females (33.3 percent) and males (37.3 percent) were between the ages of 18 and 24 years.

- The majority of perpetrators victimizing females were relatives of the victims (28.4 percent), followed by friends (22.3 percent) and acquaintances (18.2 percent). Unlike female victims, the majority of perpetrators victimizing males were friends (25.3 percent), followed by strangers (20.9 percent) and acquaintances (19.8 percent). Sexual assaults committed by an intimate partner are usually under-reported; however, 15.1 percent of the female victims and 8.8 percent of the male victims stated that the offenders were intimate partners.

- A significant proportion of female victims (37 percent) and 23.1 percent of male victims believed the perpetrator might harm them or harm or kill someone close to them. About 17.4 percent of the female and 8.8 percent of the male victims reported having been physically injured during the incident. Guns, knives and other weapons were used in the assault of 8.8 and 3.3 percent of the female and male victims respectively.

- Of the 489 female victims, 15 (3.1 percent) reported that they got pregnant as a result of the crime. Nine (1.8 percent) female and 2 (2.2 percent) male victims contracted a sexually transmitted disease.

- Compared to non-victims, female victims were two times more likely to perceive their health to be poor. Sexual assault victims were also more likely to use alcohol and drugs than non-victims.

- While the majority of victims did not seek professional help, 40 percent of the female and 15.4 percent of the male victims consulted a counselor. Only 3.1 percent of the female and 2.2 percent of the male victims phoned a hotline or went to a crisis center. Only 59 (12 percent) female victims reported the event to the police, of which only 54.2 percent filed charges. Even fewer male victims (6 or 6.6 percent) reported the incident to the police and only one filed charges.

- Thinking about the experience, 22.4 percent of the female and 16.2 percent of the male victims wished for services that were not available at the time of the sexual assault. However, 91.7 percent of the female victims and 87.4 percent of the female non-victims felt that their communities have programs or services for women, men or children who have been victims of sexual violence.

- Both male and female victims were 1.8 times more likely than non-victims to recommend the use of counseling for other victims of sexual assault. On the other

hand, both male (2.6 times) and female (1.8 times) victims were less likely than non-victims to recommend reporting sexual assault to the police.

This study confirms that sexual assault is a major public health problem in the Commonwealth of Virginia. The findings make it clear that the majority of assault victims were victimized as children or adolescents. Although victims were aware of the existence of services, the majority never received professional help. Most do not recommend seeking legal help or reporting the assault to the police. This study provides important information to help program planners and policy makers understand the magnitude of the problem, identify needs and allocate resources.

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Introduction

Sexual assault is a major public health problem in the United States. It affects all sectors of society and has many social, legal, political and economic implications. Nationally, a woman is sexually assaulted every two to three minutes. One out of every three women experiences some form of sexual assault in her lifetime and one child in four will be sexually assaulted before his or her 18th birthday; approximately 75 percent will be girls[1]. Most sexual assaults are not reported to authorities and most victims do not seek services, thus making effective strategies for detection, prevention and treatment difficult.

The term sexual assault implies sexual contact without consent, regardless of the relationship that exists between parties. While these crimes may fall under federal jurisdiction, most fall under state jurisdiction. Because the statutes vary by state, there is no universal definition of rape or sexual assault. The Federal Bureau of Investigation Uniform Crime Reporting System has specifically defined a forcible sexual offense as any sexual act directed against another person, forcibly and/or against that person's will; or not forcibly or against the person's will where the victim is incapable of giving consent. Sexual assault includes rape, attempted rape, child rape, date rape, marital rape, child molestation, forcible sodomy and indecent liberties. It also includes incest, obscenity, fondling and any kind of sexual harassment[2].

The U.S. Department of Justice used the following definition of rape for its National Crime Victimization Survey for Rape and Sexual Assault: forced sexual intercourse [vaginal, anal or oral penetration by the offender(s)], including both psychological coercion and physical force. This category includes incidents where the penetration is from a foreign object such as a bottle. This definition includes attempted rapes, male and female victims, and heterosexual and homosexual rape[3].

Existing literature cites evidence of the high prevalence of rape. Existing literature also focuses more on rape than any other form of sexual assault, due in part to the more objective definition of rape and because rape is reported and studied more frequently than other forms of sexual assault. A meta-analysis has shown that almost 13 percent of women and 3 percent of men worldwide may be raped at some time during their lives[4]. The United States has the highest rate of rape of any country that publishes such statistics, 13 times higher than Great Britain and 20 times higher than Japan[1]. An estimated 302,100 women and 92,700 men are forcibly raped each year in the United States[3]. Estimates suggest that males account for 25 to 35 percent of child sexual abuse victims[5]. These estimates are considered to be lower than the actual incidence[6].

In samples of North American college students and communities, about one woman in four reports having been the victim of a rape or an attempted rape[7, 8]. About 15 percent of male college students report having attempted intercourse with an unwilling female at least once[7]. Nearly 99 percent of the offenders described in single-victim incidents were males[9]. According to the U.S. Department of Justice's 1999 National Crime Victimization Survey (NCVS), an estimated 89 percent of the victims of rape and sexual assault are female and 11 percent are male[3].

Data from the NCVS show that more than half of all sexual assault victims are younger than 25, with 330,088 rapes and sexual assaults reported against people aged 12 and older in 1998[3]. The highest incidence was among adolescents aged 12 to 19, more than twice that among people 25 years and older[10]. In Virginia, of those who were provided services for sexual assault, 23 percent were under the age of 18 and females accounted for 84 percent of the cases[11]. Blacks were more likely to be raped than Whites: 2.6 per 1,000 people versus 1.6 per 1,000, respectively.

According to the National Women's Study, only 22 percent of all assaults were committed by a stranger[1]. An acquaintance or relative commits most of these sexual assaults; and adolescents with developmental disabilities are at particular risk of assault by someone they know. A partner or ex-partner commits more than 50 percent of sexual assaults among women over 30 years old. This accounts for more sexual assaults than are committed by strangers, other relatives and acquaintances combined[12]. In Virginia, 77 percent of rape victims served in 2001 knew their attacker[11].

Crimes of a sexual nature are among the leading type of underreported crimes. Rape is called the most underreported violent crime in America. In a large national survey of American women, only 16 percent of rapes (approximately one out of every six) had ever been reported to the police[1]. This figure suggests that a much larger number of rapes are actually committed.

Overall, rape and other sexual assaults have the highest annual victim cost of any crime. The annual victim costs are $127 billion (excluding child sex abuse cases), or about $508 per U.S. resident. This translates to approximately $3.6 billion annually for Virginia[11]. This figure represents tangible and intangible costs including initial police response, medical care, property loss, hours lost from work, pain and suffering but does not include the costs of investigation, prosecution or incarceration.

Sexual violence and assault can affect the physical, mental, social and emotional well-being of victims, and is associated with a number of health consequences including unwanted pregnancies, sexually transmitted diseases including HIV/AIDS, gynecological complications, depression, post traumatic stress disorder and suicidal ideation and behavior[13]. Although serious trauma resulting in hospital admission, surgical treatment or death occurs in only 1 percent of all victims, physical evidence of trauma is frequently present[14].

Little is known about sexual assaults against males, but it is believed that it occurs more frequently than reported. There are many psychosocial aspects of male sexual abuse that make men reluctant to seek help. Many may not seek help unless they perceive a need for immediate attention, such as physical trauma requiring medical assistance. Literature reveals that when men do seek help they may be treated poorly[15].

A study of male sexual abuse victims showed that almost one in ten had engaged in juvenile prostitution, 14 percent were forced into sexual activity before 14 years of age. Those exposed to non-consensual sex were three times more likely to abuse alcohol than those free of victimization[16]. Persons of authority, gay partners and men in all-male

institutions often perpetrated sexual assaults against males[17]. Male survivors of child sexual abuse were twice as likely as non-survivors to be HIV positive[18].

The quality of care delivered to sexual assault victims is neither consistent nor adequate. It has been demonstrated that women receiving treatment in emergency departments are not being provided the full complement of treatment recommended in the Centers for Disease Control and Prevention guidelines[19]. A review of the recent literature shows that emergency department staff may not be routinely providing antibiotic therapy for the prevention of sexually transmitted diseases or emergency contraception to victims of sexual assault[20].

Rape survivors who do choose to report to the police routinely experience the criminal justice process as re-victimizing[21]. Among the various reasons given by women for not reporting were fear that family and other people would know, fear of reprisal from the offender, fear of being blamed/thinking that it was her fault, and belief that police could not and would not do anything[1, 2].

Sexual assault represents a prevalent public health problem with significant consequences for society. This study determines the prevalence of sexual assault and outlines important risk factors in Virginia. The results presented in this report can be used to enable policy makers, program planners and service providers to understand the magnitude of sexual assault, the service needs and barriers to services.

Methods

A telephone survey using random digit dialing (RDD) sample selection was conducted from November 2002 through February 2003. A total of 1,769 female and 705 male adult (≥18 years of age) residents of Virginia were surveyed.

Two independent, equal-probability samples were drawn to represent the female and male populations of Virginia. The sample was drawn from banks of 100 consecutive phone numbers in Virginia with at least one known listed phone number. Telephone numbers were called up to 15 times at varying times of day on varying days of the week to reach eligible survey participants. Respondents were selected at random from households with an adult male or female by asking for an eligible adult who most recently had a birthday. This method is frequently used to approximate more elaborate, time-consuming random selection tables.

Because of the sensitive nature of the study, only experienced interviewers were selected to conduct the Virginia sexual assault survey. Interviewers were given intensive training on subject-specific interviewing techniques and how to handle victims in emotional distress. Female interviewers interviewed all female respondents. However, respondents were offered a choice of a male interviewer and were told they could switch the gender of the interviewer at any point during the survey. To enhance the likelihood of participation, a toll-free number was provided to allow respondents to call back at a more convenient time. In addition, initial refusals were re-contacted for a "refusal conversion" unless the initial refusal included a request not to be called again. Despite these efforts, only 35.8 percent of females and 21 percent of males contacted responded to the survey.

The survey instrument for this study was adopted from a survey completed in Washington state and two national studies: the National Women's Study (NWS) and the National Violence Against Women Survey (NVAWS). The questionnaire was programmed in Computer Assisted Survey Execution System (CASES) using the Computer Assisted Telephone Interviewing (CATI) system. The instrument and the system were pre-tested and recommended changes were made accordingly. Before the initiation of the survey, survey instruments and methodologies were reviewed and approved by the Virginia Commonwealth University's Institutional Review Board (IRB). Unlike the two national surveys and the Washington survey, this study used detailed clarification and precise words to inform prospective participants of the potential risks and benefits of the study. A copy of the questionnaire and instructions can be obtained at the Virginia Department of Health.

Survey respondents were asked about their history of sexual assault, the type of assault, the perpetrator, consequences of the assault, help-seeking behaviors, lifetime experiences of other traumatic events, perception of personal safety, availability of services and perceptions of community responses to sexual assault.

To build rapport and enhance the reliability of the information, the survey instrument was structured to begin with general questions about personal safety and non-sexual victimization. Once a relationship was built through these warm-up questions,

respondents were asked more sensitive questions about sexual victimization. Prior to querying respondents about sexual assault, respondents were informed of the sensitive nature of the questions and were provided the toll-free Virginia Family Violence and Sexual Assault hotline number (1-800-838-8238) for help. Respondents were then asked sexual assault screening questions to determine the occurrence of sexual assault. These screening questions identified if respondents were forced to have vaginal sex, oral sex, anal sex, forced sex with objects, attempted rape and sex when the person was unable to give consent due to heavy alcohol consumption or being under the influence of illicit drug(s). The screening questions also included non-forcible sex when the victim was a child (less than 18 years old). If a person had experienced any of the above, he or she was asked for his or her age when the event occurred and if the event happened in the past year. The interviewer asked for the age of the perpetrator if the respondent reported being sexually assaulted as a child. The interviewer asked more detailed questions to identify the worst, first and past year sexual assault experiences.

Determination of the prevalence of sexual assault was done based on the screening questions listed below. If a person said "yes" to any of the screening questions, including sexual assault as a child, then the person was defined to have been a victim of sexual assault. To better understand the prevalence of sexual victimization, sexual assault was classified as rape, attempted rape, inappropriate touch of the breast, buttock and/or genitalia area, inability to consent, non-forcible child rape and child molestation.

For the purpose of this study, the definition of rape was adopted from the NVAWS, which defines rape as an event that occurred without the victim's consent that involved use or threat of force to penetrate the victim's vagina or anus using tongue, fingers, or objects, or victim's mouth by penis[2]. Four questions were used to determine the occurrence of rape:

- *Regardless of how long ago it happened or who did it, has a woman or girl (man or boy) ever made you have sex by using force or threatening to harm you or someone close to you? [When definition was requested correct medical terms were used to define sex; by sex we mean your penis in her vagina (his penis in your vagina)].*
- *Has anyone EVER made you have oral sex by using force or threat of harm? [When definition was requested correct medical terms were used; by oral sex we mean that a man or a boy put his penis in your mouth or someone, male or female, penetrated your anus with their mouth or tongue, (or someone, male or female, put your penis in their mouth for male version only).*
- *Has anyone EVER made you have anal sex by using force or threat of harm? [When definition was requested correct medical terms were used; by anal sex we mean that a man or boy put his penis in your anus or your penis in someone's anus].*
- *Has anyone, male or female EVER put fingers or objects in your anus/vagina against your will by using force or threat of harm?*

Attempted rape was defined if a participant responded "yes" to the following question:

- *Has anyone, male or female, EVER **attempted** to make you have vaginal, oral, or anal sex against your will, but intercourse or penetration did not occur?*

Inappropriate touch was determined based on the following question:

- *Has anyone EVER touched your (breasts) buttocks or genital area by using force or by threatening to hurt you or someone close to you?*

Unable to consent due to alcohol or use of illicit drugs was defined based on an affirmative response to the question:

- *Has anyone EVER made you have any kind of sexual intercourse when you had too much alcohol to drink or had taken drugs and could not agree to have sex or say no to having sex?*

Non-forcible child rape was defined if the perpetrator was older than the victim by five years or more and the respondent answered "yes" to the following question:

- *When you were a child, by this we mean 17 years old or less, did anyone **older** than you EVER have any kind of sexual intercourse with you WITHOUT using force or threatening to harm you or someone else?*

This question was followed by two questions inquiring the victim's age and the age of the perpetrator.

Non-forcible child molestation was defined based on the following question and the perpetrator must be at least five years older than the victim.

- *When you were a child, by this we mean 17 years old or less, did anyone **older** than you ever touch your (breasts) buttocks or genital area WITHOUT using force or threatening to harm you or someone close to you?*

This question was followed by two questions inquiring the victim's age and the age of the perpetrator.

Respondents that affirmed the occurrence of sexual assault were asked detailed questions about their relationship to the perpetrator, consequences of the sexual violence, use of drugs and alcohol, the perpetrator's use of weapon and threats, injuries sustained by the victim, and the victim's use of medical, mental health and justice systems.

Like any other survey, the estimates generated from this survey are subject to random sampling error (S.E.). For questions answered by all female respondents (1,769), the survey percentages are likely to be within +/- 2.3 percentage and for questions answered by all male respondents (705), the survey percentages are likely to be within +/- 3.7 percentage points.

Data Analysis

Data analysis utilized un-weighted data because: 1) Preliminary analyses show that the difference between weighted and un-weighted data was insignificant and 2) surveys conducted nationwide and by individual states used un-weighted data and being able to compare findings with those other studies benefits this evaluation. These studies used un-weighted data because of the inconsistency of weighing in multiple variables (some being heavily weighted), complexity of data analysis and complication in construction of demographic weights [2].

Estimates resulting from fewer responses were examined and, where appropriate, groups were combined to provide sufficient numbers for analysis. Groups that represent "refused" and "don't know" were recoded as missing.

Univariate and bivariate analyses were done to examine the data using SPSS 11.0 for Windows software. Proportions were calculated to estimate prevalence. Where appropriate, means, medians and ranges were reported. For further understanding, basic descriptive analysis was used. Victims and non-victims were also compared to determine associations. Measures of association such as chi-square statistics, odds ratios and 95 percent confidence intervals and t-tests were utilized. The Prevalence Odds Ratio (POR) was calculated to measure risk in selected demographic variables.

Results

Survey participants included a total of 1,769 females and 705 males between the ages of 18 and 92 years. The average age of participants was 46.2 (S.E. 0.38) for females and 47.3 (S.E. 0.59) for males. About one quarter of the survey participants were between 40 and 49 years of age. To determine the representativeness of the sample, selected demographic characteristics of the survey sample were compared with demographic characteristics of the general population of Virginia reported by the Census Bureau's 2000 population survey.

Table 1 shows that the distribution of the survey sample is similar to the population of Virginia from which the sample was drawn. However, this sample under-represents older people (80+ years of age), African American men, other minority populations, Virginians with less than high school or college level education, divorced men and people with income less than $25,000.

Table 1. Characteristics of Survey Participants as Compared to Virginia Population

Demographic Characteristics	Female		Male	
	Survey (n=1769) %	Population (n=2,757,460) %	Survey (n=705) %	Population (n=2,582,793) %
Age in Years				
18-24	7.7	11.8	7.4	13.5
25-29	7.7	8.9	6.1	9.6
30-39	21.3	21.1	20.1	22.2
40-49	23.1	20.8	23.5	21.4
50-59	18.5	15.3	18.2	15.6
60-69	10.9	9.7	14.3	9.2
70-79	7.3	7.8	7.4	6.0
80+	2.4	4.7	2.6	2.3
Race				
White	74.1	73.8	76.0	74.5
Black or African-American	17.7	19.0	12.9	17.7
Asian/ Hawaiian/Pacific Island	1.2	3.9	1.4	3.6
American Indian/Alaskan	0.2	0.3	1.3	0.3
Other	0.6	1.5	5.8	2.1
Hispanic Origin				
Yes	4.1	3.8	3.1	4.7
No	95.5	96.2	95.7	95.3

Demographic Characteristics	Female		Male	
	Survey (n=1769) %	Population (n=2,757,460) %	Survey (n=705) %	Population (n=2,582,793) %
Education				
<High School	9.4	17.9	9.5	19.2
High School Graduate/GED	42.9	27.0	37.3	25.0
College	33.2	45.6	37.6	42.1
Post-graduate	14.2	9.7	15.5	13.7
Income				
<$25,000	17.2	60.0	15.2	39.7
$25,000-$49,999	25.7	28.9	23.4	29.4
$50,000-$74,999	15.5	7.5	18.0	14.4
$75,000+	23.2	3.7	31.2	12.3
Marital Status				
Married/Living as Married	63.7	50.8	71.3	54.1
Single, Never Married	15.8	23.5	18.4	29.1
Divorced/Separated	12.1	13.2	6.8	10.5
Widowed	8.0	9.9	3.4	2.3

Prevalence

The lifetime prevalence of sexual assault among Virginia residents was 27.6 percent for females and 12.9 percent for males (Table 2). The majority of female victims were victims of rape, with a prevalence of 17.8 percent, while the majority of male victims were either non-forcibly molested or raped as children, with a prevalence of 6.4 and 4.5 percent respectively. For females, inappropriate touch of the breast, buttock or genitalia area was the second most reported type of assault (10.7 percent), followed by non-forcible child molestation and non-forcible child rape (9.9 and 4.1 percent respectively). For men, completed rape and attempted rape were the second and third most reported types of assault (3.5 and 2.7 percent respectively) followed by inappropriate touching of breast, buttock or genitalia area (2.6 percent) and being taken advantage of while drunk or under the influence of illicit drugs, with a prevalence of 2.1 percent (Table 2).

Table 2. Lifetime Prevalence of Sexual Victimization

Type of Sexual Assault	Female		Male	
	Number	Percent	Number	Percent
Rape	314	17.8	25	3.5
Attempted Rape	159	9.0	19	2.7
Inappropriate touch	190	10.7	18	2.6
Unable to Consent	107	6.0	15	2.1
Non-forcible Child Rape	73	4.1	32	4.5
Non-forcible Child Molestation	167	9.4	45	6.4
Total Sexual Victimization	**489***	**27.6**	**91***	**12.9**

*Columns do not add up to total: some respondents reported more than one type of sexual assault.

The number of sexual assaults in the past year was significantly lower than the lifetime prevalence. Only 17 of the female and one male participant reported experiencing any form of sexual assault in the past year (Table 3). The 17 female participants who reported sexual assault in the previous year accounted for 29 sexual assault events. The majority of these events were inappropriate touch of breast, buttock or genitalia area followed by attempted rape and completed rape. The average number of sexual assaults per woman in the previous year was 1.7. However, since the number of events was not explicitly asked in the survey, the actual number may be underestimated. Since the annual rates of sexual assault are based on only 17 victims, the data should be interpreted with caution.

Table 3. Sexual Victimization in the Previous 12 months

Type of Sexual Assault	Female		Male	
	Number	Percent	Number	Percent
Rape	6	0.3	0	0
Attempted Rape	7	0.4	0	0
Inappropriate touch	11	0.6	0	0
Unable to Consent	5	0.3	1	0.1
Non-forcible Child Rape	0	0	0	0
Non-forcible Child Molestation	0	0	0	0
Total Sexual Victimization	**17***	**1.0**	**1**	**0.1**

* Columns do not add up to total: some respondents reported more than one type of sexual assault.

Prevalence of Sexual Assault by Demographic Characteristics

Age

The prevalence of sexual assault is higher among females 18 to 24 years old (35.3 percent) and tends to decrease as the age increases. Unlike female victims, the prevalence of sexual assault in males was higher among 25 to 29 years old (20.9 percent) followed by 18 to 24 years old (17.3 percent).

Race/Ethnicity

The prevalence of sexual assault among White females (27.9 percent) was higher than among Black females (26.8 percent). However, the prevalence of sexual assault in males was higher among Black men (12.1 percent). The highest prevalence was reported by respondents identifying themselves as: Asian, Pacific Islander, Hawaiian, mixed race or other ethnic group. Respondents in this group represent only 2.0 percent of the female and 8.7 percent of the male participants. Among this group, the prevalence of sexual assault against women was 28.9 percent and among men was 21.7 percent.

The prevalence of sexual assault among Hispanic females (18.1 percent) was less than among non-Hispanic females (28.2). On the other hand, the prevalence among Hispanic males was higher (22.7 percent) than among non-Hispanic males (12.7 percent).

Education

Prevalence of sexual assault tends to increase with level of education up to the college level, where the highest prevalence was observed (32.2 percent among female and 12.1 percent among male participants). The prevalence is lower among participants with post-graduate education: 25.4 percent in female and 20.2 in male participants. No statistical association was found between education and sexual assault.

Income

The prevalence of sexual assault tends to increase with income, with the highest prevalence of sexual assault observed among participants with household income between $50,000 and $74,000 (31.3 percent among women and 15.7 percent among men). The prevalence decreases among participants who earn more than $75,000.

Marital Status

Single adults reported the highest prevalence of sexual assault (33.6 percent among women and 17.7 percent among men), followed by those who are separated/widowed/ divorced (19.5 percent among women and 13.9 percent among men). The lowest prevalence was observed among married women (25.8 percent) and married men (11.5 percent). No statistically significant difference was observed between marital status and sexual assault.

Table 4. Prevalence of Sexual Assault by Demographic Characteristic

Demographic Characteristics	Female			Male		
	Prevalence	POR	95% CI	Prevalence	POR	95% CI
Age in Years						
18-24	35.3	1.0	1.0	17.3	1.0	1.0
25-29	32.1	1.15	0.70, 1.91	20.9	0.79	0.28, 2.21
30-39	33.5	1.08	0.72, 1.63	14.8	1.21	0.51, 2.84
40-49	33.8	1.07	0.71, 1.60	13.9	1.30	0.56, 3.02

Demographic Characteristics	Female			Male		
	Prevalence	POR	95% CI	Prevalence	POR	95% CI
50-59	23.5	1.78	1.15, 2.75	10.9	1.70	0.69, 4.22
60+	14.0	3.35	2.11, 5.30	11.9	2.16	0.88, 5.28
Race						
White	27.9	1.0	1.0	11.8	1.0	1.0
Black Or African-American	26.8	1.05	0.80, 1.39	12.1	0.97	
Other	28.9	0.95	0.62, 1.45	21.7	0.48	0.25, 0.94
Hispanic Origin						
Yes	18.1	1.78	0.97, 3.28	22.7	0.50	0.18, 1.38
No	28.2	1.0	1.0	12.7	1.0	1.0
Education						
<High School	25.3	1.01	0.64, 1.58	10.4	2.17	0.57, 5.40
High School Graduate/GED	26.3	0.96	0.69, 1.33	11.4	1.96	1.07, 3.58
College	31.2	0.75	0.54, 1.05	12.1	1.84	1.04, 3.34
Postgraduate	25.4	1.0	1.0	20.2	1.0	1.0
Income						
<$25,000	32.2	1.0	1.0	13.1	1.0	1.0
$25,000-$49,999	32.4	0.99	0.73, 1.35	14.5	0.88	0.44, 1.80
$50,000-$74,999	31.3	1.05	0.74, 1.48	15.7	0.81	0.39, 1.68
$75,000+	27.3	1.27	0.92, 1.75	13.6	0.95	0.48, 1.88
Marital Status						
Married/Living as Married	25.8	1.20	0.93, 1.57	11.5	1.24	0.60, 2.55
Single, Never Married	33.6	0.83	0.59, 1.16	17.7	0.75	0.34, 1.68
Divorced/Separated/ Widowed	29.5	1.0	1.0	13.9	1.0	1.0

Age of First Sexual Assault

The majority (78.1 percent) of sexual assault incidents among women happened when victims were under 18 years of age: 38.3 percent before age 13 and 26.3 percent between ages 13 and 17. Nearly all of the male victims (94.4 percent) were assaulted before their 18th birthday. About 58 percent of the male rape victims were younger than 13 and about 25 percent were between 13 and 17. Almost three quarters (73.7 percent) of the female and 77.7 percent of the male victims who reported to have been touched inappropriately on their breast, buttock or genitalia area were underage (younger than 18). Of the participants who were unable to consent due to alcohol or drugs, a higher proportion of men were under 18: 60.0 percent, compared to 34.9 percent of women (Table 5).

Table 5. First Sexual Assault Among Participants

Type of Sexual Assault	**Female** (%)			**Male** (%)		
	< 13	**13-17**	**≥18**	**< 13**	**13-17**	**≥18**
Rape	118 (38.3)	81 (26.3)	109 (35.4)	14 (58.3)	6 (25.0)	44 (16.7)
Attempted Rape	57 (36.5)	48 (30.8)	51 (32.7)	6 (33.3)	10 (55.6)	2 (11.1)
Inappropriate touch	77 (41.4)	60 (32.3)	49 (26.3)	6 (33.3)	8 (44.4)	4 (22.2)
Unable to Consent	2 (1.9)	35 (33.0)	69 (65.1)	1 (6.7)	8 (53.3)	6 (40.0)
Non-forcible Child Rape	39 (31.7)	84 (68.3)	-	11 (26.8)	30 (73.2)	-
Non-forcible Child Molestation	135 (55.3)	109 (44.7)	-	24 (42.9)	32 (57.1)	-
Total Sexual Victimization	**221 (45.7)**	**157 (32.4)**	**106 (21.9)**	**40 (44.4)**	**45 (50)**	**5 (5.6)**

While a significant number of first sexual assaults occurred when the victims were children or adolescents, the age of first victimization ranged from 0 to 50 years in females and 3 to 38 years in males. The mean age of sexual assault was 14 for females and 12 for males. Table 6 shows the average age of first sexual assault.

Table 6. Average Age at First Sexual Assault

Type of Sexual Assault	Female		Male	
	Mean (SE)	Median (Range)	Mean (SE)	Median (Range)
Rape	15.3 (0.47)	15 (0 – 48)	10.9 (1.11)	10 (3 – 22)
Attempted Rape	15.6 (0.69)	15 (3 – 50)	14.2 (1.6)	14 (5 – 38)
Inappropriate touch	14.3 (0.57)	14 (2 – 50)	14.1 (1.6)	14 (3 – 35)
Unable to Consent	20.0 (0.56)	18 (11 – 46)	18.2 (1.6)	17 (12 – 39)
Child Rape	11.6 (0.49)	15 (4 – 17)	13.3 (0.55)	15 (6 – 17)
Child Molestation	10.3 (0.28)	13 (3 – 17)	11.9 (0.47)	13 (5 – 17)
Total Sexual Victimization	**13.6**	**14 (0 – 50)**	**12.2 (0.52)**	**13 (3 – 38)**

Number of Events and Perpetrators

Of the total survey participants, 489 females and 91 males were sexual assault victims. Of these, 43.8 percent of females and 38.5 percent of males reported having experienced a single event by one person, whereas 1.6 percent of women and 19.8 percent of the men reported a single event by two or more people. Multiple events by the same person were reported by 20.4 percent of women and 25.3 percent of men. As compared to 12.1 percent of the male victims, 29 percent of female victims reported having been assaulted multiple times by two or more people. In response to the initial screening questions, 24 women (4.9 percent) and 3 men (3.3 percent) reported having an unwanted sexual experience; however, when later asked about the number of events by single or multiple persons, they reclassified the experience as wanted. Only 0.2 percent of the female and 1.1 percent of male victims did not know if single or multiple persons committed the sexual assault (Figure 1 and 2).

Figure 1. Number of Sexual Assault Experiences and Perpetrators Reported by Female Participants

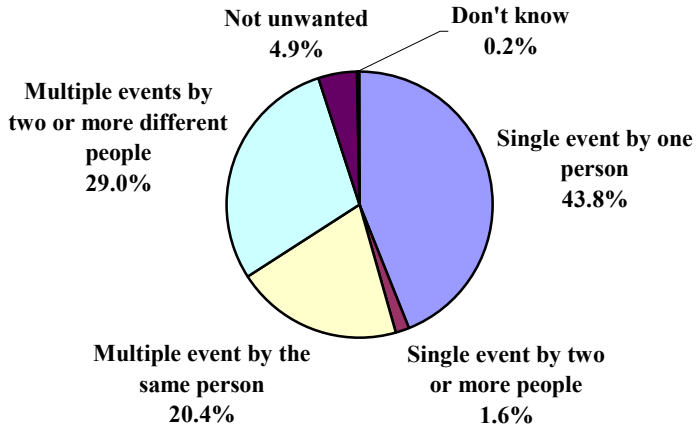
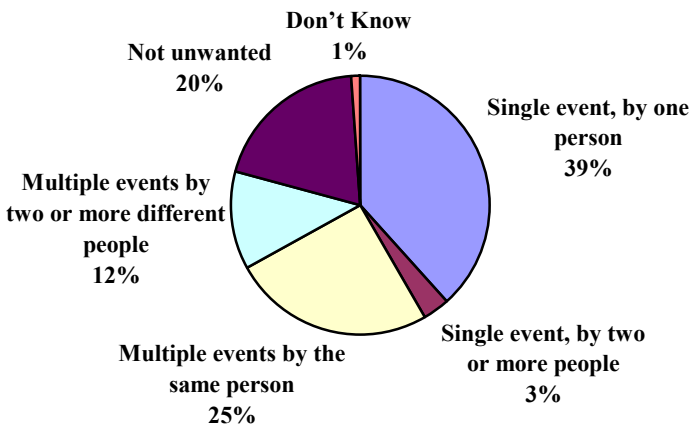


Figure 2. Number of Sexual Assault Experiences and Perpetrators Reported by Male Partcipants



About 41.3 percent of the female victims and 45.3 percent of the male victims reported that it was very hard to remember some or all of their experiences. Of these, 10.9 percent of the female and 22.2 percent of the male victims could not remember some or the entire event because of alcohol or drug use before/during the incident.

Characteristics of Perpetrators

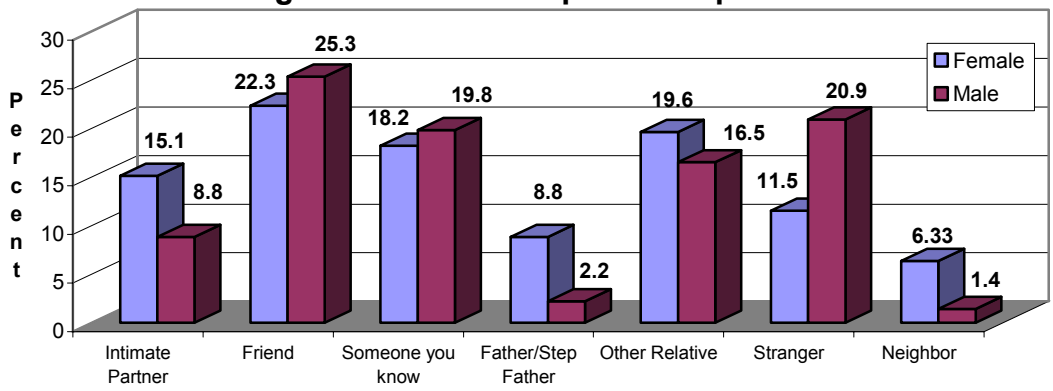
The majority of assaults against both females and males were perpetrated by males (96.4 percent of assaults against females and 60.0 percent of assaults against males). However, a significant proportion (38.6 percent) of perpetrators that assaulted males were females. Most perpetrators victimizing females (33.3 percent) and males (37.3 percent) were between the ages of 18 and 24 years of age (Table 7).

Table 7. Age and Sex of Perpetrators

Characteristics	Female (%)	Male (%)
Sex		
Male	351 (96.4)	42 (60.0)
Female	9 (2.5)	27 (38.6)
Both	4 (1.1)	1 (1.4)
Age in years		
18-24	111 (33.3)	19 (37.3)
25-34	101 (30.3)	13 (25.5)
35-44	73 (21.9)	16 (31.4)
45-54	26 (7.8)	3 (5.9)
55+	22 (6.6)	0

Most perpetrators of these assaults were known to the victims. Among female victims, the majority of offenders (28.4 percent) were relatives (father/step father/other), followed by friends (22.3 percent) and other acquaintances (18.2 percent). Conversely, the majority of offenders among men were friends (25.3 percent), followed by strangers (20.9 percent) and acquaintances (19.8 percent). Sexual assault committed by an intimate partner is usually under-reported; however, 15.1 percent of the female victims and 8.8 percent of the male victims stated that the offenders were intimate partners (Figure 3).

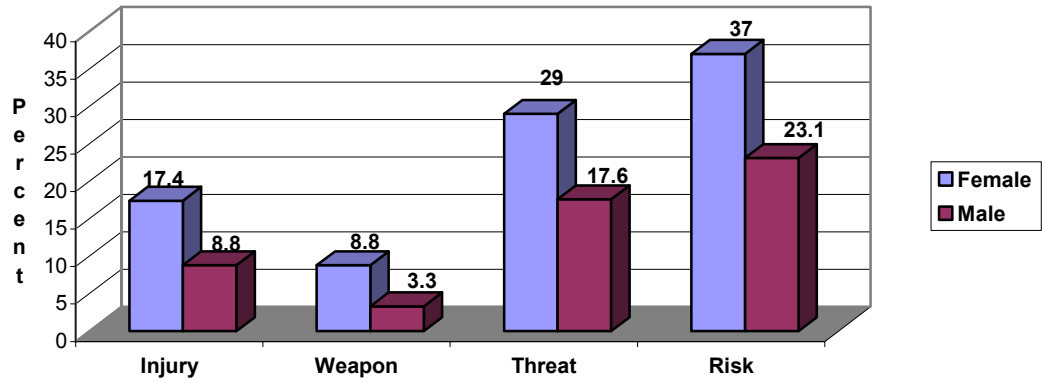
Figure 3. Relationship with Perpetrator



Injury and Use of Threats and Weapons

When asked if they were injured during the incidents, 17.4 percent of the female and 8.8 percent of the male victims reported having been physically injured. A significant portion of the female (37 percent) and male victims (23.1 percent) believed that the perpetrator might harm them or harm or kill someone close to them (labeled "Risk" in Figure 4). Furthermore, 29 percent of the females and 17.6 percent of the males stated that they were threatened during the event. Guns, knives and other weapons were used in 8.8 percent of female cases and 3.3 percent of male cases (Figure 4).

Figure 4. Injury and Threats Used to Commit the Assault

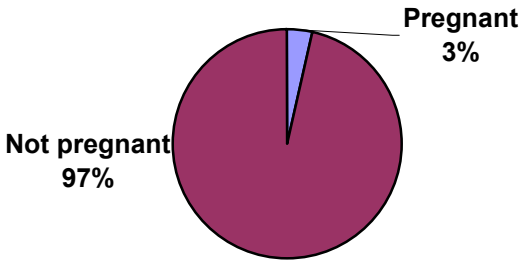


Consequences of Sexual Assault

Pregnancy and Sexually Transmitted Diseases

Of the 489 female victims, 15 (3.1 percent) reported that they got pregnant as a result of the assault (Figure 5). Nine female (1.8 percent) and 2 male (2.2 percent) victims contracted a sexually transmitted disease during the assault.

Figure 5 . Pregnency and Sexual Assault



Health Status Perceptions

When victims were asked to compare their health to other people their age, sexual assault victims rated their health as poorer (Table 8). Female victims were two times more likely to perceive their health to be poorer as compared to non-victims. However, none of the differences in male victims showed statistical significance.

Table 8. Relationship Between Health Status and Sexual Assault

Health Status	Sexual Assault	No Sexual Assault	OR	95% CI
Female	**(n=489)**	**(n=1280)**		
Excellent	17.0	20.7	1.0	1.0
Very good	35.5	37.8	1.14	0.84, 1.56
Good	31.4	29.5	1.33	0.96, 1.83
Fair	11.7	9.4	1.51	0.99, 2.30
Poor	4.5	2.5	2.19	1.15, 4.13
Male	**(n=91)**	**(n=614)**		
Excellent	20.9	21.2	1.0	1.0
Very good	29.7	34.8	0.87	0.44, 1.70
Good	13.0	30.7	1.17	0.64, 2.14
Fair	15.4	10.1	1.54	0.68, 3.49
Poor	3.3	3.1	1.08	0.23, 4.40

Drug and Alcohol Use

Victims of sexual assault tend to consume more alcohol than non-victims (Table 9). As compared to non-victims, female victims were 1.67 times more likely to consume alcohol two to three times a week. Of the female participants, only 17 victims and 18 non-victims reported use of drugs, such as marijuana, cocaine or other street drugs. Although there was no difference between victims and non-victims in the number that used drugs, there was a difference in the average number of days drugs were used (Table 9).

There is also a statistically significant association between alcohol use and sexual assault among male victims. As compared to non-victims, victims were 1.9 times more likely to consume alcohol 2 to 4 times a month. Although not statistically significant, the mean number of occurrences of drug use among victims was higher than non-victims.

Table 9. Relationship Between Drug and Alcohol Use and Sexual Assault

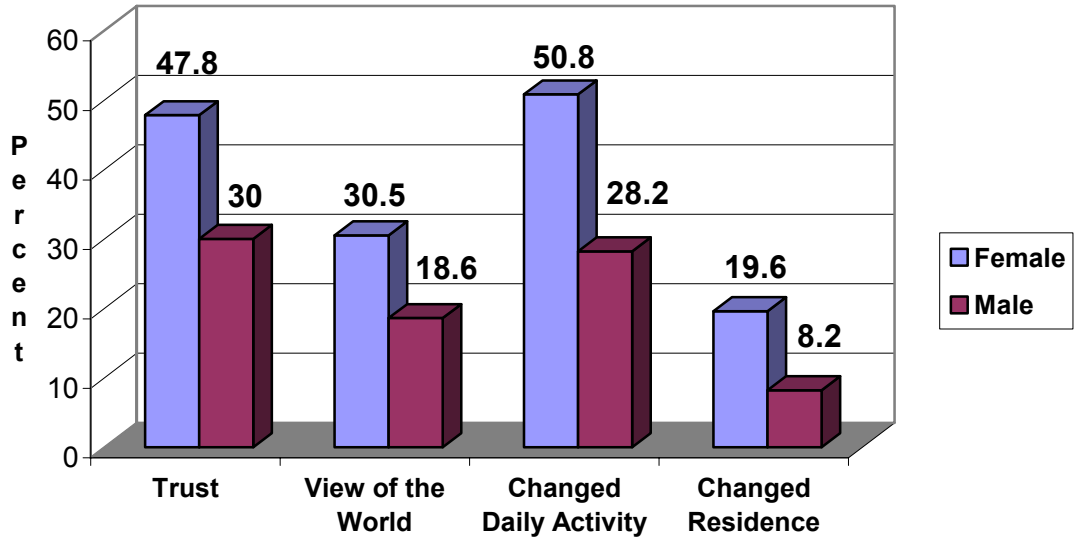
Alcohol and Drug Use	Sexual Assault	No Sexual Assault	OR	95% CI
Female	**(n=489)**	**(n=1280)**		
Alcohol Use				
Never	33.8	40.5	1.0	
Once a Month or Less	32.0	30.0	1.28	0.98, 1.66
2-4 Times a Month	15.6	16.0	1.17	0.84,1.62
2-3 Times a Week	12.5	8.9	1.67	1.15, 2.43
4 or More Times a Week	6.1	4.6	1.62	0.98, 2.66
Drug Use				
Mean number of days drug use	10.2	6.1	T=1.21	P = 0.23
Male	**(n=91)**	**(n=614)**		
Alcohol Use				
Never	23.1	21.2	1.0	
Once a Month or Less	23.1	34.8	1.40	0.70, 2.80
2-4 Times a Month	30.8	30.7	1.91	1.0, 3.67
2-3 Times a Week	11.0	10.1	0.92	0.39, 2.15
4 or More Times a Week	12.1	3.1	1.36	0.58, 3.16
Drug Use				
Mean number of days drug use (S.E.)	1.22 (0.33)	3.68 (1.51)	-2.39	0.07

Changes in Life

People's lives often change as a result of such experiences. When asked to rate the change in different aspects of life as change for the better, worse or no change, a significant proportion of the female victims reported their trust of other people (47.8 percent) and their view of the world (30.5 percent) changed for the worse after the event. Just over half of the female victims changed their daily activities in some way and 19.6 percent changed where they lived because of these unwanted sexual events.

Unlike the female survey participants, most of the male participants claimed that their lives have not changed as a result of the sexual assault. However, a significant proportion of the victims reported their trust of other people (30.0 percent) and their view of the world (18.6 percent) changed for the worse after the event. About 28.2 percent of the male victims had to change their daily activities in some way and 8.2 percent changed where they lived because of these unwanted sexual events (Figure 6).

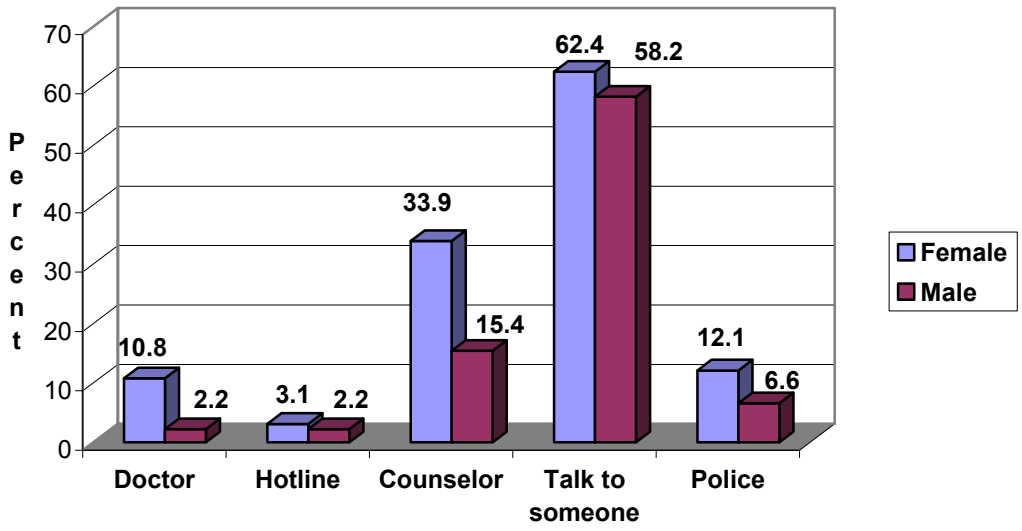
Figure 6. Perception of Change in Life



Help Seeking Behaviors

The majority of victims did not seek professional help. However, 62.4 percent of the female and 58.2 percent of the male victims talked to someone about the event. About 40 percent of the female and 15.4 percent of the male victims consulted a counselor. Only 3.1 percent of the female and 2.2 percent of the male victims phoned a hotline or went to crisis center (Figure 7).

Figure 7. Help Seeking Behavior of Victims



Most victims did not report sexual assault incidents to the police. Of the female victims, only 59 (12 percent) reported the event to the police; of these, only 54.2 percent filed charges. On the other hand, only 6 of the male victims reported the incident to the police; of these, only one filed charges. Legal advocates were used in 47.5 percent of the female cases reported to the police.

Usefulness of Services

To determine the usefulness of services, respondents were asked to rate their experiences as completely helpful, very helpful, somewhat helpful, slightly helpful and not helpful at all. Of the 305 female victims who talked to someone, 62 percent claimed that it was completely or very helpful and 40.4 percent did not find it helpful at all. Of the 166 female victims who sought help from a counselor or therapist, 56.7 percent found the therapy to be completely or very helpful while 6.6 percent found it not to be helpful. Of the 15 victims who sought help from hotline or crisis center, 62 percent felt the help was completely or very helpful. None found it to be unhelpful. Of the 59 female victims who reported to the police, 44.1 percent found the police to be completely or very helpful; however, 28.8 percent felt reporting to the police was not helpful (Table 10).

Unlike female victims, very few male victims sought help from any source. Of the 53 male victims who talked to someone, 54.7 percent claimed that it was completely or very helpful; however, 13.2 percent did not find it helpful at all. Of the 91 male victims, only 14 sought help from a counselor or therapist, of which 64.3 percent found the therapy to be completely or very helpful and 21.4 percent found it not helpful. Only two male victims sought help from a hotline or crisis center; one found it slightly helpful and one did not find it to be helpful at all. Of the six male victims who reported to the police, 33.3 percent found the police to be completely or very helpful; however, 50.0 percent felt reporting to the police was not helpful (Table 10).

Table 10. Helpfulness of Services Received

Services	Female	Male
Talked to Someone	**(n=305)**	**(n=53)**
Completely helpful	33.6	13.2
Very helpful	38.4	41.5
Somewhat helpful	22.9	26.4
Slightly helpful	9.2	5.7
Not helpful	11.8	13.2
Counselor	**(n=166)**	**(n=14)**
Completely helpful	16.3	14.3
Very helpful	40.4	50
Somewhat helpful	29.5	0
Slightly helpful	11.4	7.1
Not helpful	6.6	21.4
Hotline	**(n=15)**	**(n=2)**
Completely helpful	13.3	0
Very helpful	46.7	0
Somewhat helpful	20.0	50.0
Slightly helpful	26.7	0
Not helpful	0	50.0
Police	**(n=59)**	**(n=6)**
Completely helpful	16.9	33.3
Very helpful	27.1	0
Somewhat helpful	15.3	0
Slightly helpful	10.2	16.7
Not helpful	28.8	50.0

Thinking about the experience, 22.4 percent of the female and 16.2 percent of the male victims wished that services that they needed were available at the time of the assault.

Perceptions of Services and Recommendations

Victims and non-victims have similar opinions about the availability of services in hospitals and medical centers; however, statistically significant differences were observed in their perception of community awareness and police or legal system response.

As compared to 34.4 percent of female non-victims, only 27.0 percent of female victims felt the community is well aware of the problem of sexual assault. However, 91.7 percent of the female victims and 87.4 percent of the female non-victims felt their communities have programs or services for women, men or children who have been victims of sexual violence. Victims were 1.6 times more likely to perceive that their communities have programs or services for sexual assault victims and were 1.5 times more likely to perceive that sexual assault crisis centers were available. Victims were 4.85 times more likely to rate the police or legal system to be poor (Table 11).

Table 11. Perception of Service Availability and Sexual Assault

	Sexual Assault	No Sexual Assault	OR	95% CI
Female	**(n=489)**	**(n=1280)**		
Awareness of services				
Very aware	27.0	34.4	1.0	1.0
Somewhat aware	45.8	43.3	1.35	1.03, 1.77
A little aware	19.3	14.9	1.65	1.17, 2.33
Not aware	7.9	7.3	1.38	0.87, 2.21
Availability of rape crisis center	88.6	83.6	1.53	1.04, 2.26
Availability of Services	91.7	87.4	1.60	1.05, 2.42
Police or Legal System				
Excellent	9.8	14.3	1.0	1.0
Very good	24.7	37.3	0.96	0.62, 1.50
Good	34.6	33.3	1.51	0.99, 2.32
Fair	19.7	11.7	2.45	1.51, 3.97
Poor	11.1	3.3	4.85	2.63, 8.99
Availability of hospital/medical center	89.7	87.6	1.23	0.83, 1.82
Male	**(n=91)**	**(n=614)**		
Awareness of services				
Very aware	28.6	32.4	1.0	1.0
Somewhat aware	38.1	40.3	1.07	0.59, 1.96
A little aware	21.4	19.5	1.25	0.61, 2.52
Not aware	11.9	7.9	1.71	0.70, 4.08
Availability of Services	97.1	89.4	3.99	0.99, 16.78
Availability of rape crisis center	91.8	86.8	1.70	0.65, 4.43
Availability of hospital/medical ctr.	89.2	87.7	1.16	0.53, 2.53
Police or Legal System				
Excellent	7.2	16.7	1.92	0.72, 5.39
Very good	32.5	39.2	2.71	1.02, 7.60
Good	34.9	29.8	3.31	1.09, 10.44
Fair	15.7	11.0	6.82	1.84, 26.06
Poor	9.6	3.3		

As compared to 32.4 percent of male non-victims, only 28.6 percent of the male victims felt that the community is well aware of the problem of sexual assault. However, an overwhelming majority of the victims (97.1 percent) and 89.4 percent of the non-victims felt that their communities have programs or services for women, men or children who have been victims of violence. The majority reported that their community has a sexual assault crisis center or sexual assault program and hospitals or medical centers that take care of rape or sexual assault victims. As compared to male non-victims, male victims were 6.8 times more likely to rate the police or legal system poorly (Table 11).

Recommended Action to Sexual Assault

Victims and non-victims have significantly different opinions when asked what will they recommend if a person close to them is assaulted (Table 12). Both male and female victims were 1.8 times more likely to recommend counseling. On the other hand, both male and female victims were less likely to recommend reporting to the police. Male victims were also 2.2 times more likely to recommend talking to relative (Table 12).

Table 12. Recommended Action to Sexual Assault

Recommendation	Sexual Assault %	No Sexual Assault %	OR	95% CI
Female	**(n=1280)**	**(n=489)**		
Report to police	70.8	80.9	0.57	0.45, 073
Go to the doctor	54.8	55.6	0.97	0.78, 1.20
Get counseling	56.4	42.0	1.79	1.44, 2.22
Take legal action	6.5	5.2	1.27	0.80, 1.99
Talk to partner	2.9	1.4	2.06	0.96, 4.39
Talk to friends	5.7	3.9	1.49	0.90, 2.46
Talk to relatives	6.1	3.9	1.61	0.98, 2.62
Safety precaution	1.6	0.9	1.75	0.65, 4.63
Male	**(n=91)**	**(n=614)**		
Report to police	62.6	80.9	0.39	0.25, 0.63
Go to the doctor	41.8	44.3	0.90	0.58, 1.41
Get counseling	50.5	36.2	1.81	1.16, 2.81
Take legal action	3.3	6.7	0.56	0.72, 4.34
Talk to partner	3.3	2.0	1.71	0.47, 6.18
Talk to friends	5.5	3.7	1.49	0.55, 4.03
Talk to relatives	9.9	4.7	2.21	1.01, 4.84
Safety precaution	1.1	2.0	0.48	0.14, 1.57

Discussion

This report has presented state level data on the prevalence of sexual assault in Virginia, including sexual assault against males, an issue about which there is little data. The majority of studies previously used to determine the prevalence and incidence of sexual assault have been conducted in other states using small and defined samples such as college students [22, 23]. However, these studies do provide a benchmark against which the Virginia results can be compared.

The Virginia study presented in this report found that the lifetime prevalence of sexual assault among women and men in Virginia is 27.6 and 12.9 percent respectively. In comparison, a 1998 Colorado statewide survey (Colorado Department of Public Health and Environment and Colorado Coalition Against Sexual Assault) found that 24 percent of Colorado women and 6 percent of Colorado men have experienced a completed or attempted sexual assault in their lifetime[24]. Conversely, Washington State has a higher prevalence of sexual assault among females (38 percent) than Virginia[25].

As compared to some National studies, 17.8 percent, the prevalence of rape among females in Virginia is high. Both the NWS and NVAWS found that the lifetime prevalence of rape among females is 13 and 15 percent respectively[1, 3]. In a national sample of 7,000 female college students, Koss and colleagues (1987) found that 15 percent of respondents were raped and an additional 12 percent had experienced attempted rape. The only nationwide study of violence among men showed a three percent prevalence of rape among 8,000 men surveyed in the United States[3]. This is comparable to the 3.5 percent prevalence among males included in this study.

When looking at sexual assault victimization in the previous year, the rate of female victimization in Virginia (1 percent) is higher than the national average, which is 0.3 percent. However, the rate among Virginian men is consistent with the national average, which stands at 0.1 percent[1]. Since the annual rates of sexual assault are based on only 17 females and 1 male, the data should be interpreted with caution.

The majority of sexual assault victims were under 18 years of age and almost three quarters of women who reported being touched inappropriately in the breast, buttock or genitalia area were underage. Although this finding is consistent with NVAWS, NWS and the Washington State Survey, the proportion of victims that were children and adolescents is much higher in Virginia[1, 3, 25]. The NVAWS study reported that 54 percent of the rape victims were under the age of 18, compared to 63.4 percent among females in Virginia. An overwhelming majority of the male victims (96.6 percent) were assaulted before their 18th birthday.

Similar to the NVAW and Washington Survey, the majority of the sexual assaults were single events perpetrated by one person[3, 25]. Unlike these findings, however, 4.9 percent of the women and 3.3 percent of the men who reported history of unwanted sexual experience during the initial screening questions on the Virginia survey denied the experience when detailed questions about the event were later asked. This could be due to misunderstanding of the questions, self-blame, or an unclear definition of sexual

assault. It should be noted that these numbers were included in the calculation of prevalence.

As in most other reports, this study found that the majority of the perpetrators of sexual assault were relatives of the victims [11]. Of particular concern is the high use of threats and weapons for carrying out the assault. About 17 percent of female and 9 percent of male victims reported being physically injured, while about 29 percent of the females and 18 percent of the males reported being threatened during the event. Guns, knives and other weapons were used in 8.8 and 3.3 percent of the female and male cases respectively. These rates are similar to Washington State, where 23 percent of the female victims were threatened, 8 percent reported use of weapons and about 20 percent were injured[25].

Sexual violence can affect the physical, mental, social and emotional well being of victims[13]. This study reported a pregnancy rate of three percent following the assault. Equally important is the finding that 2.2 percent of female and 1.8 percent of male victims contracted sexually transmitted diseases. This finding is disturbing particularly when it is compounded by the fact that most health care providers do not provide emergency contraception and antibiotic treatments to these victims[19, 20]. This study shows that the effects of sexual assault are not only immediate, but can be long term and lead to maladaptive patterns of behaviors. It was seen from this study that sexual assault victims rated their health more poorly than non-victims, were more likely to consume alcohol, had a higher mean number of days of drug use, and had lower levels of trust than non-victims. In fact, many reported having to change their daily activities and even their residences.

This study supports existing literature, which suggests that reporting to legal authorities, health institutions and crisis centers is low among assault victims. The study shows that sexual assault victims do find services helpful, especially counseling, and have a high awareness of service availability. However, the majority of victims did not seek professional help. This finding is consistent with the study conducted in Washington State[25].

Although no statistical associations were found, the prevalence of sexual assault was higher among ethnic groups included under "Other," followed by Whites and Blacks. The prevalence is also higher among people with college level education. Both men and women who were single and earned between $50,000 and $75,000 reported the highest sexual assault victimization. These findings are consistent with other surveys except for ethnicity. Most studies show that Blacks/African Americans have a higher rate of sexual assault [1, 3, 25].

This study provides empirical data on the extent of sexual assault in Virginia. Among the strengths of this study are the representative sample population, examination of the issue of sexual assault against men, and the telephone survey methodology. The telephone survey is effective and cost efficient and can include a greater sample of the population than other methods. Moreover, the sensitive nature of the questions might preclude the respondents from answering openly in face-to-face interviews. Telephone interviews are also an effective way to locate hard-to-reach respondents. The use of CATI allows for

more personalized questions, and the interview can be much more sophisticated than the paper one. It also reduces missing data by avoiding routing errors.

The questionnaire for this study was adopted from a survey conducted in Washington and two nationwide surveys, the NWS and NVAWS. Data from these studies have been published in peer-reviewed journals and are reliable sources of information in determining the magnitude of sexual assault in the United States. By adopting this instrument, data from the Virginia sexual assault survey provides information that is scientifically validated and findings that are comparable to these studies. Unlike the two national surveys and the Washington survey, this study used detailed clarification and stronger words to inform prospective participants of the risks and benefits of this study. As a result, this study might have lost potential survey candidates that were victims of sexual assault.

Like any research, this study has limitations. This sample excludes participants who are institutionalized and who do not have telephones. It is possible that people who do not live in the community (are institutionalized) and people without telephones differ on significant variables from people who do (ex: exposure to risk factors, income level). Moreover, this study does not include children and adolescents, which prevents the generalization of these results to anyone under 18 years of age. It should also be remembered that all figures and estimates were gathered by self-reporting and may be lower or higher than actually reported. Furthermore, most events occurred when victims were minors, which may contribute to a recall bias.

The sample population of this study is representative of the general adult population of Virginia. Distribution of demographic characteristics of the survey sample is similar to that of the population survey. However, some population groups were either under- or over-represented. To correct for the population distribution and other sampling errors, a weighted sample was analyzed. For reasons specified in the methods section, this document reported the un-weighted data.

Survey data are also subject to many other sources of error. Because these errors are difficult or impossible to measure, the extent to which the survey results depart from the true population values may be unknown. While every effort is made to control and eliminate such error, caution should be used when interpreting survey results. In this survey, it was a challenge to obtain high response rates. The response rate of this survey was lower than that of the NWAVS (60 percent), the Washington survey (78 percent) and the Colorado survey (58 percent) [3, 24, 25]. This could be because of the trend toward declining to participate in phone surveys. Also, the increasing number of people who have technologies to screen phones and decline phone calls from unknown numbers might have contributed to this low response rate. If non-responders are unlike responders, then non-response error could be present in the survey data. Because we have no data on non-responders, it is difficult to determine the amount of non-response error. Other surveys about sensitive or threatening topics, however, suggest that survey reports of these behaviors generally tend to be underreports, meaning the actual prevalence is higher than the survey estimates.

Conclusions and Recommendations

In conclusion, this study found that sexual assault is a prevalent public health problem in the Commonwealth of Virginia. Lifetime prevalence and the rate of sexual assault in the previous year are higher than the national average. The majority of sexual assaults occurred when victims were children or adolescents. Perpetrators among women were relatives and friends whereas perpetrators against men were friends and strangers. Consequences of sexual assault included pregnancy, sexually transmitted diseases, poor perception of health status, decreased trust of other people and an altered view of the world. The majority was aware of the availability of services; however, most victims did not seek professional help and report to law enforcement. Males were particularly reluctant to seek help, whether in reporting to the police or going to a counselor. This is of grave concern. In addition to creating awareness of services and their usefulness, a social structure more receptive to male sexual assault victims is needed to encourage men to seek help.

Moreover, more studies are needed to examine the risk factors, consequences, support systems and attitudes toward sexual assault and to understand the barriers to service utilization. A larger scale study may be conducted to determine the magnitude of the problem in smaller geographic localities such as counties and zip codes.

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